AMENDMENTS TO THE CLAIMS

1. (Currently amended) In a simulation environment, a computer-implemented method for controlling collection of data generated by a dynamic system model, comprising:

providing the dynamic system model in the simulation environment on a computer system;

providing a controller system separate from the dynamic system model on the computer system, the controller system including:

at least ~~one controller and~~ two ~~or more~~ data modules, the ~~two or more~~ data modules ~~being~~ communicatively coupled to collect data from the dynamic system model,

one or more functions, the one or more functions executed by at least two of the data modules, and

at least one controller controlling two or more of the data modules;

activating the dynamic system model, thereby generating data; and

~~synchronizing data collection from the dynamic system model by the two or more data modules using the at least one controller~~controlling two or more of the data modules to simultaneously execute at least one of the functions to achieve synchronization of at least one of collection or analysis of the generated data at a point in time, the controlling performed using the at least one controller.

2. (Currently amended) The method of claim 1, ~~further comprising executing~~ where:

the at least one of the functions includes a snapshot function, and where: ~~to direct at least one of~~

the controlling simultaneously executes the snapshot function at the two or more data modules to synchronously freeze a display of data collected by the controlled data modules, the freezing occurring while the dynamic system model continues to execute and the generated data continues to be collected by the controlled data modules.

3. (Previously presented) The method of claim 2, further comprising providing the display of data collected while data continues to be collected without updating the display.

4. (Previously presented) The method of claim 2, further comprising manipulating the display of data collected while data continues to be collected.

5. (Currently amended) The method of claim 1, ~~further comprising executing~~ where:

the at least one of the functions includes a suspend function, and where:

the controlling simultaneously executes the suspend function at the two or more data modules to synchronously pause collection of the generated data by the controlled data modules while the dynamic system model continues to operate.

6. (Original) The method of claim 1, further comprising providing an interface having a communication port for communicating with each of the two or more data modules.

7. (Original) The method of claim 1, further comprising directing a review of data collected by the two or more data collection instruments by utilizing a review function.

8. (Previously presented) The method of claim 1, further comprising defining data history parameters utilizing a data history function.

9. (Original) The method of claim 8, wherein the data history parameters comprise at least one of amount of data history, amount of memory allocation for storing data history, types of data collected, signal attributes, and data formats.

10. (Original) The method of claim 1, further comprising directing a buffering mode to be utilized during data collection from one of a circular buffering mode, a finite buffering mode, and a buffer extension mode by executing a data buffering mode function.

11. (Previously presented) The method of claim 1, further comprising utilizing a scroll function to scroll through previously collected data while the dynamic system model is operating.

12. (Original) The method of claim 1, further comprising providing a time tracking function that directs a graphical display indication of a time history of data collected.

13. (Previously presented) The method of claim 1, wherein synchronizing the two or more data modules comprises conveying to the selected of the two or more data modules a direction to synchronize execution of one or more functions at the selected of the two or more data modules by utilizing a broadcasting function.

14. (Original) The method of claim 1, further comprising utilizing an event based trigger to initiate a data module action.

15. (Original) The method of claim 1, wherein the simulation environment comprises at least one of a graphical, textual, data flow, time based, and event based environments.

16. (Previously presented) The method of claim 1, wherein the two or more data modules are virtually formed using at least one of MATLAB software, JAVA, C++ and object-oriented code.

17. (Original) The method of claim 1, wherein the two or more data modules provide displays in the form of at least one of textual, graphical, multi-dimensional, oscilloscope, and spectrum analyzer.

18. (Canceled)

19. (Currently amended) In a simulation environment, a computer-implemented method for controlling collection of data generated by a dynamic system model, comprising:

providing the dynamic system model in the simulation environment on a computer system;

providing a controller system separate from the dynamic system model on the computer system, the controller system including:

at least ~~one controller and~~ two ~~or more~~ data modules, the ~~two or more~~ data modules ~~being~~ communicatively coupled to collect data from the dynamic system model,

a snapshot function executed by at least two of the data modules, and

at least one controller controlling two or more of the data modules;

activating the dynamic system model, thereby generating data; and

~~synchronizing data collection from the dynamic system model by the two or more data modules using the at least one controller~~controlling two or more of the data modules to simultaneously execute the snapshot function to synchronously~~; and executing a snapshot function to direct at least one of the two or more data modules to~~ freeze a display of data collected by the controlled data modules, the freezing occurring while the dynamic system model continues to execute and the generated data continues to be collected by the controlled data modules, the controlling performed using the at least one controller.

20. (Previously presented) The method of claim 19, further comprising providing the display of data collected while data continues to be collected without updating the display.

21. (Previously presented) The method of claim 19, further comprising manipulating the display of data collected while data continues to be collected.

22. (Currently amended) The method of claim 19, further comprising:

controlling a second two or more of the data modules to simultaneously~~executing~~ execute a suspend function to synchronously pause collection of the generated data by the second two or more data modules while the dynamic system model continues to operate, the controlling performed using the at least one controller.

23. (Original) The method of claim 19, further comprising providing an interface having a communication port for communicating with each of the two or more data modules.

24. (Original) The method of claim 19, further comprising directing a review of data collected by the two or more data collection instruments by utilizing a review function.

25. (Previously presented) The method of claim 19, further comprising defining data history parameters utilizing a data history function.

26. (Original) The method of claim 25, wherein the data history parameters comprise at least one of amount of data history, amount of memory allocation for storing data history, types of data collected, signal attributes, and data formats.

27. (Original) The method of claim 19, further comprising directing a buffering mode to be utilized during data collection from one of a circular buffering mode, a finite buffering mode, and a buffer extension mode by executing a data buffering mode function.

28. (Previously presented) The method of claim 19, further comprising utilizing a scroll function to scroll through previously collected data while the dynamic system model is operating.

29. (Original) The method of claim 19, further comprising providing a time tracking function that directs a graphical display indication of a time history of data collected.

30. (Previously presented) The method of claim 19, wherein synchronizing the two or more data modules comprises conveying to the selected of the two or more data modules a direction to synchronize execution of one or more functions at the selected of the two or more data modules by utilizing a broadcasting function.

31. (Original) The method of claim 19, further comprising utilizing an event based trigger to initiate a data module action.

32. (Original) The method of claim 19, wherein the simulation environment comprises at least one of a graphical, textual, data flow, time based, and event based environments.

33. (Previously presented) The method of claim 19, wherein the two or more data modules are virtually formed using at least one of MATLAB software, JAVA, C++ and object-oriented code.

34. (Original) The method of claim 19, wherein the two or more data modules provide displays in the form of at least one of textual, graphical, multi-dimensional, oscilloscope, and spectrum analyzer.

35. (Canceled)

36. (Currently amended) In a simulation environment, a computer-implemented method for controlling collection of data generated by a dynamic system model, comprising:

providing the dynamic system model in the simulation environment on a computer system;

providing a controller system separate from the dynamic system model on the computer system, the controller system including:

at least ~~one controller and~~ two ~~or more~~ data modules, the ~~two or more~~ data modules ~~being~~ communicatively coupled to collect data from ~~the model of~~ the dynamic system model,

a suspend function executed by at least two of the data modules, and

at least one controller controlling two or more of the data modules;

activating the dynamic system model, thereby generating data; and

~~synchronizing data collection from the dynamic system model by the two or more data modules using the at least one controller~~controlling two or more of the data modules to simultaneously execute the suspend function to synchronously~~; and~~

~~executing a suspend function to~~ pause collection of the generated data by the controlled data modules while the dynamic system model continues to operate, the controlling performed using the at least one controller.

37. (Currently amended) The method of claim 36, further comprising:

controlling a second two or more of the data modules to simultaneously~~executing~~ execute a snapshot function to ~~direct at least one of the two or more data modules to~~ synchronously freeze a display of data collected by the second two or more data modules, the freezing occurring while the dynamic system model continues to execute and the generated data continues to be collected by the second two or more data modules, the controlling performed using the at least one controller.

38. (Previously presented) The method of claim 37, further comprising providing the display of data collected while data continues to be collected without updating the display.

39. (Previously presented) The method of claim 37, further comprising manipulating the display of data collected while data continues to be collected.

40. (Original) The method of claim 36, further comprising providing an interface having a communication port for communicating with each of the two or more data modules.

41. (Original) The method of claim 36, further comprising directing a review of data collected by the two or more data collection instruments by utilizing a review function.

42. (Previously presented) The method of claim 36, further comprising defining data history parameters utilizing a data history function.

43. (Original) The method of claim 42, wherein the data history parameters comprise at least one of amount of data history, amount of memory allocation for storing data history, types of data collected, signal attributes, and data formats.

44. (Original) The method of claim 36, further comprising directing a buffering mode to be utilized during data collection from one of a circular buffering mode, a finite buffering mode, and a buffer extension mode by executing a data buffering mode function.

45. (Previously presented) The method of claim 36, further comprising utilizing a scroll function to scroll through previously collected data while the dynamic system model is operating.

46. (Original) The method of claim 36, further comprising providing a time tracking function that directs a graphical display indication of a time history of data collected.

47. (Previously presented) The method of claim 36, wherein synchronizing the two or more data modules comprises conveying to the selected of the two or more data modules a direction to synchronize execution of one or more functions at the selected of the two or more data modules by utilizing a broadcasting function.

48. (Original) The method of claim 36, further comprising utilizing an event based trigger to initiate a data module action.

49. (Original) The method of claim 36, wherein the simulation environment comprises at least one of a graphical, textual, data flow, time based, and event based environments.

50. (Previously presented) The method of claim 36, wherein the two or more data modules are virtually formed using at least one of MATLAB software, JAVA, C++ and object-oriented code.

51. (Original) The method of claim 36, wherein the two or more data modules provide displays in the form of at least one of textual, graphical, multi-dimensional, oscilloscope, and spectrum analyzer.

52. (Canceled)

53. (Currently amended) A computer-implemented method for controlling collection of data generated by a dynamic system, comprising:

providing the dynamic system;

providing a controller system separate from the dynamic system on a computer system, the controller system including:

at least ~~one controller and~~ two ~~or more~~ data modules, the ~~two or more~~ data modules ~~being~~ communicatively coupled to collect data from the dynamic system,

one or more functions, the one or more functions executed by at least two of the data modules, and

at least one controller controlling two or more of the data modules;

activating the dynamic system, thereby generating data; and

~~synchronizing data collection from the dynamic system by the two or more data modules using the at least one controller~~controlling two or more of the data modules to simultaneously execute at least one of the functions to achieve synchronization of at least one of collection or analysis of the generated data at a point in time, the controlling performed using the at least one controller.

54. (Currently amended) The method of claim 53, ~~further comprising executing~~ where:

the at least one of the functions includes a snapshot function, and where: ~~to direct at least one of~~

the controlling simultaneously executes the snapshot function at the two or more data modules to synchronously freeze a display of data collected by the controlled data modules, the freezing occurring while the dynamic system continues to execute and the generated data continues to be collected by the controlled data modules.

55. (Previously presented) The method of claim 54, further comprising providing the display of data collected while data continues to be collected without updating the display.

56. (Previously presented) The method of claim 54, further comprising manipulating the display of data collected while data continues to be collected.

57. (Currently amended) The method of claim 53, ~~further comprising executing~~ where:

the at least one of the functions includes a suspend function, and where:

the controlling simultaneously executes the suspend function at the two or more data modules to synchronously pause collection of the generated data by the controlled data modules while the dynamic system continues to operate.

58. (Original) The method of claim 53, further comprising providing an interface having a communication port for communicating with each of the two or more data modules.

59. (Original) The method of claim 53, further comprising directing a review of data collected by the two or more data collection instruments by utilizing a review function.

60. (Previously presented) The method of claim 53, further comprising defining data history parameters utilizing a data history function.

61. (Original) The method of claim 60, wherein the data history parameters comprise at least one of amount of data history, amount of memory allocation for storing data history, types of data collected, signal attributes, and data formats.

62. (Original) The method of claim 53, further comprising directing a buffering mode to be utilized during data collection from one of a circular buffering mode, a finite buffering mode, and a buffer extension mode by executing a data buffering mode function.

63. (Previously presented) The method of claim 53, further comprising utilizing a scroll function to scroll through previously collected data while the dynamic system is operating.

64. (Original) The method of claim 53, further comprising providing a time tracking function that directs a graphical display indication of a time history of data collected.

65. (Previously presented) The method of claim 53, wherein synchronizing the two or more data modules comprises conveying to the selected of the two or more data modules a direction to synchronize execution of one or more functions at the selected of the two or more data modules by utilizing a broadcasting function.

66. (Original) The method of claim 53, further comprising utilizing an event based trigger to initiate a data module action.

67. (Original) The method of claim 53, wherein the simulation environment comprises at least one of a graphical, textual, data flow, time based, and event based environments.

68. (Previously presented) The method of claim 53, wherein the two or more data modules are virtually formed using at least one of MATLAB software, JAVA, C++ and object-oriented code.

69. (Original) The method of claim 53, wherein the two or more data modules provide displays in the form of at least one of textual, graphical, multi-dimensional, oscilloscope, and spectrum analyzer.

70. (Original) The method of claim 53, wherein the dynamic system is at least one of a virtual system and a physical system.

71. (Canceled)

72. (Currently amended) In a simulation environment, a system for controlling collection of data generated by a dynamic system model, the system comprising:

an electronic device including:

a memory for storing:

computer program instructions for a simulation application that includes the dynamic system model, and

data generated by the dynamic system model, and

a processor for executing:

the stored computer program instructions, the computer program instructions including instructions for initializing the simulation environment, and

~~the dynamic system model provided in a simulation application and configured to generate the data; and~~

instructions for a controller system separate from the dynamic system model, the controller system including:

at least ~~one controller and~~ two ~~or more~~ data modules, the ~~two or more~~ data modules ~~being~~ communicatively coupled to collect data from the dynamic system model,

one or more functions, the one or more functions executed by at least two of the data modules, and

at least one controller to control two or more of the data modules to simultaneously execute at least one of the functions to achieve synchronization of at least one of collection or analysis of the generated data at a point in time~~;~~

~~wherein the data collection from the dynamic system model by the two or more data modules is synchronized using the at least one controller~~.

73. (Currently amended) In a simulation environment, a system for controlling collection of data generated by a dynamic system model, the system comprising:

an electronic device including:

a memory for storing:

computer program instructions for a simulation application that includes the dynamic system model, and

data generated by the dynamic system model, and

a processor for executing:

the stored computer program instructions, the computer program instructions including instructions for initializing the simulation environment, and

~~the dynamic system model provided in a simulation application and configured to generate the data; and~~

instructions for a controller system separate from the dynamic system model, the controller system including:

at least ~~one controller and~~ two ~~or more~~ data modules, the ~~two or more~~ data modules ~~being~~ communicatively coupled to collect data from the dynamic system model,

a snapshot function executed by at least two of the data modules, and

at least one controller to control two or more of the data modules to simultaneously execute the snapshot function to synchronously~~;~~

~~wherein the data collection from the dynamic system model by the two or more data modules is synchronized using the at least one controller; and~~

~~wherein a snapshot function is provided that directs at least one of the two or more data modules to~~ freeze a display of data collected by the controlled data modules, the freezing occurring while the dynamic system model continues to execute and the generated data continues to be collected by the controlled data modules.

74. (Currently amended) In a simulation environment, a system for controlling collection of data generated by a dynamic system model, the system comprising:

an electronic device including:

a memory for storing:

computer program instructions for a simulation application that includes the dynamic system model, and

data generated by the dynamic system model, and

a processor for executing:

the stored computer program instructions, the computer program instructions including instructions for initializing the simulation environment, and

~~the dynamic system model provided in a simulation application and configured to generate the data; and~~

instructions for a controller system separate from the dynamic system model, the controller system including:

at least ~~one controller and~~ two ~~or more~~ data modules, the ~~two or more~~ data modules ~~being~~ communicatively coupled to collect data from the dynamic system model,

a suspend function executed by at least two of the data modules, and

at least one controller to control two or more of the data modules to simultaneously execute the suspend function to synchronously~~;~~

~~wherein the data collection from the dynamic system model by the two or more data modules is synchronized using the at least one controller; and~~

~~wherein a suspend function is provided to~~ pause collection of the generated data by the controlled data modules while the dynamic system model continues to operate.

75. (Canceled)

76. (Currently amended) A computer-readable storage medium ~~for use in a simulation environment on an electronic device, the computer-readable medium holding~~ storing computer-executable instructions ~~executable using the electronic device~~ for ~~performing a method of~~ controlling collection of data generated by a dynamic system model when executed by a processor, the ~~method comprising~~ medium storing instructions for:

~~providing the dynamic system model;~~

providing a controller system separate from the dynamic system model, the controller system including:

at least ~~one controller and~~ two ~~or more~~ data modules, the ~~two or more~~ data modules ~~being~~ communicatively coupled to collect data from the dynamic system model,

one or more functions, the one or more functions executed by at least two of the data modules, and

at least one controller controlling two or more of the data modules;

activating the dynamic system model, thereby generating data; and

~~synchronizing data collection from the dynamic system model by the two or more data modules using the at least one controller~~controlling two or more of the data modules to simultaneously execute at least one of the functions to achieve synchronization of at least one of collection or analysis of the generated data at a point in time, the controlling performed using the at least one controller.

77. (Currently amended) The medium of claim 76, ~~the method further comprising executing~~ where:

the at least one of the functions includes a snapshot function, and where: ~~to direct at least one of~~

the controlling simultaneously executes the snapshot function at the two or more data modules to synchronously freeze a display of data collected by the controlled data modules, the freezing occurring while the dynamic system model continues to execute and the generated data continues to be collected by the controlled data modules.

78. (Currently amended) The medium of claim 77, ~~the method~~ further ~~comprising~~ storing instructions for: ~~a~~

providing the display of data collected while data continues to be collected without updating the display.

79. (Currently amended) The medium of claim 77, ~~the method~~ further ~~comprising~~ storing instructions for:

manipulating the display of data collected while data continues to be collected.

80. (Currently amended) The medium of claim 76, ~~the method further comprising executing~~ where:

the at least one of the functions includes a suspend function, and where:

the controlling simultaneously executes the suspend function at the two or more data modules to synchronously pause collection of the generated data by the controlled data modules while the dynamic system continues to operate.

81. (Currently amended) The medium of claim 76~~, the method~~ further ~~comprising~~ storing instructions for:

providing an interface having a communication port for communicating with each of the two or more data modules.

82. (Currently amended) The medium of claim 76~~, the method~~ further ~~comprising~~ storing instructions for:

directing a review of data collected by the two or more data collection instruments by utilizing a review function.

83. (Currently amended) The medium of claim 76~~, the method~~ further ~~comprising~~ storing instructions for:

defining data history parameters utilizing a data history function.

84. (Previously presented) The medium of claim 83, wherein the data history parameters comprise at least one of amount of data history, amount of memory allocation for storing data history, types of data collected, signal attributes, and data formats.

85. (Currently amended) The medium of claim 76~~, the method~~ further ~~comprising~~ storing instructions for:

directing a buffering mode to be utilized during data collection from one of a circular buffering mode, a finite buffering mode, and a buffer extension mode by executing a data buffering mode function.

86. (Currently amended) The medium of claim 76~~, the method~~ further ~~comprising~~ storing instructions for:

_____utilizing a scroll function to scroll through previously collected data while the dynamic system model is operating.

87. (Previously presented) The medium of claim 76, the method further comprising providing a time tracking function that directs a graphical display indication of a time history of data collected.

88. (Currently amended) The medium of claim 76, wherein ~~synchronizing~~ controlling the two or more data modules comprises conveying to ~~the selected of~~ the two or more data modules a direction to ~~synchronize execution of~~ simultaneously execute the at least one ~~or more~~ of the functions ~~at the selected of the two or more data modules~~ by utilizing a broadcasting function.

89. (Currently amended) The medium of claim 76~~, the method~~ further ~~comprising~~ storing instructions for:

_____utilizing an event based trigger to initiate a data module action.

90. (Previously presented) The medium of claim 76, wherein the simulation environment comprises at least one of a graphical, textual, data flow, time based, and event based environments.

91. (Currently amended) The medium of claim 76, wherein the two or more data modules are virtually formed using at least one of MATLAB software, JAVA, C++~~,~~ and object-oriented code~~, and computer code~~.

92. (Previously presented) The medium of claim 76, wherein the two or more data modules provide displays in the form of at least one of textual, graphical, multi-dimensional, oscilloscope, and spectrum analyzer.

93. (Canceled)